

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

- A²
Cont
1. (currently amended) A ~~pointing device~~ mouse comprising:
a housing for supporting a user's hand;
first and second buttons mounted on said housing;
a pointing sensor, mounted in said housing between said buttons, for providing a pointing signal;
a contour on said housing for receiving a finger of said user, said contour having curvature in at least one directions;
a solid-state touch sensor in said contour for detecting movement of said finger along said contour.
 2. (currently amended) ~~The device of claim 1~~ A pointing device comprising:
a housing for supporting a user's hand;
a pointing sensor, mounted in said housing, for providing a pointing signal;
a contour on said housing for receiving a finger of said user, said contour having curvature in at least one directions;
a solid-state touch sensor in said contour for detecting movement of said finger along said contour;
wherein said contour comprises a trench shaped to match a curve traced by a fingertip of said finger during a bending of said finger about a knuckle of said finger.
 3. (original) The device of claim 1 wherein said touch sensor comprises:
at least two electrodes mounted in said contour; and
a capacitive detection circuit, connected to said electrodes, for detecting a change in capacitance due to a contact of said finger with said electrodes.

4. (currently amended) ~~The device of claim 1 further comprising:~~ A pointing device comprising:


a housing for supporting a user's hand;

a pointing sensor, mounted in said housing, for providing a pointing signal;

a contour on said housing for receiving a finger of said user, said contour having curvature in at least one directions;

a solid-state touch sensor in said contour for detecting movement of said finger along said contour;

wherein said touch sensor includes a plurality of discrete electrodes mounted in said contour to detect movement of a finger, wherein at least first and second electrodes are electrically connected, with a third electrode not connected to said first and second electrodes, said third electrode being mounted where a finger will contact said third electrode in between contacting said first and second electrodes; and

 a circuit, connected to said electrodes, for detecting contact of said finger with said electrodes.

5. (currently amended) ~~The circuit of claim 1~~ A pointing device comprising:
a housing for supporting a user's hand;
a pointing sensor, mounted in said housing, for providing a pointing signal;
a contour on said housing for receiving a finger of said user, said contour having curvature in at least one directions;

a solid-state touch sensor in said contour for detecting movement of said finger along said contour;

wherein said touch sensor includes at least two electrodes, and further comprising:

a circuit for detecting a contact with said electrode, including

a first, capacitive element;

a second element connected to said capacitive element;

a comparison circuit, having an input node connected to said capacitive and second elements, for comparing a voltage at said input node to a threshold voltage;

a clamp-high circuit, connected to said node, for clamping said node high in response to a clamp-high control signal;

a clamp-low circuit, connected to said input node, for clamping said node low in response to a clamp-low control signal; and

a controller, connected to an output of said comparison circuit, to said clamp-high circuit and to said clamp low circuit, for providing said clamp-high and clamp-low control signals and generating an output signal in response to measuring an amount of time between transitions of said output of said comparison circuit.

6. (original) The device of claim 5 wherein the second element is a current source.

7. (currently amended) ~~The device of claim 1~~ A pointing device comprising:
a housing for supporting a user's hand;
a pointing sensor, mounted in said housing, for providing a pointing signal;
a contour on said housing for receiving a finger of said user, said contour having
curvature in at least one directions;

a solid-state touch sensor in said contour for detecting movement of said finger
along said contour;

wherein said touch sensor comprises a scrolling sensor, said scrolling sensor providing a scrolling command in response to a movement of a users finger across said stationary sensor, and continuing to provide said scrolling command in response to said finger reaching one end of said stationary scrolling sensor without lifting off.

8. (original) The device of claim 1 further comprising:
a sensory feedback element for providing feedback to a user corresponding to an amount of movement of said finger in said contour.

9. (currently amended) ~~The device of claim 8~~ A pointing device comprising:
a housing for supporting a user's hand;

a pointing sensor, mounted in said housing, for providing a pointing signal;
a contour on said housing for receiving a finger of said user, said contour having
curvature in at least one directions;

a solid-state touch sensor in said contour for detecting movement of said finger
along said contour;

a sensory feedback element for providing feedback to a user corresponding to an
amount of movement of said finger in said contour;

wherein said sensory feedback element comprises a plurality of tactile formations
on a surface of said contour.

10. (currently amended) ~~The device of claim 8~~ A pointing device comprising:
a housing for supporting a user's hand;

a pointing sensor, mounted in said housing, for providing a pointing signal;
a contour on said housing for receiving a finger of said user, said contour having
curvature in at least one directions;

a solid-state touch sensor in said contour for detecting movement of said finger
along said contour;

a sensory feedback element for providing feedback to a user corresponding to an
amount of movement of said finger in said contour;

wherein said sensory feedback element comprises a speaker mounted in said
pointing device.

11. (currently amended) ~~The device of claim 1~~ A pointing device comprising:
a housing for supporting a user's hand;

a pointing sensor, mounted in said housing, for providing a pointing signal;
a contour on said housing for receiving a finger of said user, said contour having
curvature in at least one directions;

a solid-state touch sensor in said contour for detecting movement of said finger
along said contour;

wherein said ~~trench~~ contour is at least partially translucent, and further comprising a light emitting element mounted in said pointing device.

12. (currently amended) A pointing device comprising:
a housing;
a pointing sensor, mounted in said housing, for providing a pointing signal;
a plurality of discrete electrodes mounted on said housing to detect movement of a finger, wherein at least first and second electrodes are electrically connected,
with a third electrode ~~not connected to~~ isolated from said first and second electrodes by said housing, said third electrode being mounted where a finger will contact said third electrode in between contacting said first and second electrodes; and
a circuit, connected to said electrodes, for detecting contact of said finger with said electrodes.

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13. (original) A pointing device comprising:
a housing;
a pointing sensor, mounted in said housing, for providing a pointing signal;
at least one electrode mounted on said housing;
a circuit for detecting a contact with said electrode, including
a first, capacitive element;
a second element connected to said first, capacitive element;
a comparison circuit, having an input node connected to said first and second elements, for comparing a voltage at said input node to a threshold voltage;
a clamp-high circuit, connected to said node, for clamping said node high in response to a clamp-high control signal;
a clamp-low circuit, connected to said input node, for clamping said node low in response to a clamp-low control signal;
a controller, connected to an output of said comparison circuit, to said clamp-high circuit and to said clamp low circuit, for providing said clamp-high and clamp-low control

signals and generating an output signal in response to measuring an amount of time between transitions of said output of said comparison circuit.

14. (original) The device of claim 13 wherein the second element is a current source.

15. (currently amended) A ~~pointing device~~ mouse comprising:
a housing for supporting a user's hand;
first and second buttons mounted on said housing;
a pointing sensor, mounted in said housing, for providing a pointing signal;
a stationary scrolling sensor, mounted on said housing between said buttons, said scrolling sensor providing a scrolling command in response to a movement of a users finger across said stationary sensor, and continuing to provide said scrolling command in response to said finger reaching one end of said stationary scrolling sensor without lifting off.

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About
16. (original) A method of capacitively detecting movement of a finger across a plurality of electrodes on a pointing device, comprising:
detecting, for each electrode, a first amount of time for a capacitance connected to said electrode to charge up from a low voltage to a first threshold;
detecting, for each electrode, a second amount of time for said capacitance to discharge from a high voltage to a second threshold; and
comparing said amounts of time to a calibration value corresponding to the absence of a finger on said electrodes.

17. (original) The method of claim 16 further comprising:
charging and discharging said capacitance faster than an AC frequency of an AC power supply;
detecting said first and second amounts of time at least twice during a period of said AC frequency to produce at least two measurement sets;
averaging said two measurement sets.

18. (currently amended) A pointing device comprising:
a housing for supporting a user's hand;
a pointing sensor, mounted in said housing, for providing a pointing signal;
a scrolling activator for providing a scrolling signal;
a speaker, mounted in said pointing device, for emanating sounds corresponding
to a function an aspect of said pointing device scrolling signal.

19. (original) The pointing device of claim 18 wherein said device is a mouse.

20. (currently amended) A pointing device for use with a computer system,
comprising:
a housing for supporting a user's hand;
a pointing sensor, mounted in said housing, for providing a pointing signal; and
a notification element, mounted in said pointing device, for providing a
notification to a user responsive to an event ~~external to~~ received by said computer system over a
network.

21. (original) The pointing device of claim 20 wherein said device is a mouse.

22. (original) The pointing device of claim 20 wherein said notification
element is a light emitter.

23. (original) The pointing device of claim 22 wherein said light emitter
blinks to provide said notification.

24. (original) The pointing device of claim 20 wherein said notification
element is a speaker.

25. (currently amended) A ~~pointing device~~ mouse comprising:
a housing for supporting a user's hand;
first and second buttons mounted on said housing;
a pointing sensor, mounted in said housing, for providing a pointing signal;

a solid-state touch sensor having at least two discrete electrodes mounted between said buttons, said electrodes being separated with a portion of said housing in between said electrodes, said sensor detecting movement of a finger from one electrode to another.

26. (currently amended) ~~The pointing device of claim 1 further comprising: A pointing device comprising:~~

a housing for supporting a user's hand;

a pointing sensor, mounted in said housing, for providing a pointing signal;

a contour on said housing for receiving a finger of said user, said contour having curvature in at least one directions;

a solid-state touch sensor in said contour for detecting movement of said finger along said contour; and

a control circuit, in said pointing device, for detecting a speed of movement between said two electrodes, and sending a movement signal to a computer for a number of movements corresponding to said speed.

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27. (original) The pointing device of claim 26 wherein said movement signal comprises a scrolling signal.

28. (currently amended) ~~A pointing device~~ mouse comprising:

a housing for supporting a user's hand;

first and second buttons mounted on said housing;

a pointing sensor, mounted in said housing, for providing a pointing signal;

a solid-state sensor, mounted between said buttons, for detecting movement of a finger across said sensor using capacitive sensing with a galvanic contact by said finger.

29. (original) The pointing device of claim 5 wherein said second element is a resistive element.